441553 8710-32-33

United States Steel Corporation

ANTHONY A. SPINOLA
MANAGER—HAZARDOUS WASTE
ENVIRONMENTAL AFFAIRS

ONE TECH CENTER DRIVE
MONROEVILLE, PENNSYLVANIA 15146
412/825-2067

July 9, 1987

Mr. Leon T. Gonshor
Regional Director
Department of Environmental Resources
Commonwealth of Pennsylvania
1875 New Hope Street
Norristown, PA 19401

Dear Mr. Gonshor:

Re: Slag Disposal Site
Fairless Works Permit No. 300825
Groundwater Monitoring, First Quarter 1987

In conforming with requirements of Permit No. 300825, please find enclosed the first quarter 1987 groundwater monitoring results for the Fairless Works slag disposal site.

Very truly yours,

A. A. Spinola

AAS/d(2.56)
Enclosure

Table 1
Groundwater Chemistry Data - Slag Area Monitoring Wells
USX Corporation, Fairless Works
First Quarter 1987

Parameter	Units	Well Number							
		38	39	39 Replicate	42	43	44	53	79
Groundwater Elevation	ft	3.1	3.4	3.4	4.9	6.5	5.1	3.7	6.6
Temperature	°C	13	11	11	12	13	13	16	16
pH	pH units	6.7	6.6	6.6	7.1	7.5	7.2	7.5	6.8
Specific Conductance @ 25°C	µmhos/cm	550	600	600	1100	700	1100	700	600
Total Organic Carbon	mg/l	11	4.1	3.4	6.8	4.2	5.3	5	2.7
Chemical Oxygen Demand	mg/l	44	31	31	70	31	31	18	18
Total Dissolved Solids @ 180°C	mg/l	327	347	333	633	383	647	380	340
Alkalinity	mg/l CaCO3	96	92	88	32	112	100	320	48
Chloride	mg/l	60	28	28	240	90	150	3	39
Sulfate	mg/l	80	110	120	58	74	120	14	140
Nitrate	mg/l NO3-N	< 0.1	< 0.1	< 0.1	0.7	< 0.1	< 0.1	< 0.1	< 0.1
Ammonia	mg/l NH3-N	3.7	0.2	< 0.1	27	6.7	21	6.7	< 0.1
Calcium	mg/l	48	57	57	97	66	120	79	53
Magnesium	mg/l	18	21	21	18	17	28	38	17
Sodium	mg/l	20	25	24	42	28	33	4.4	24
Potassium	mg/l	9.8	5.2	5.2	24	19	11	4.1	14
Cadmium	mg/l	0.001	< 0.001	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Copper	mg/l	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01
Lead	mg/l	< 0.001	< 0.001	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Nickel	mg/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Zinc	mg/l	0.16	0.07	0.03	< 0.01	< 0.01	< 0.01	< 0.01	0.15
Cyanide	mg/l	0.01	0.01	0.02	0.02	0.03	0.02	0.02	0.02
Phenolics	mg/l	< 0.01	< 0.01	0.02	< 0.01	< 0.01	< 0.01	0.28	0.04

Table 2
Volatile Organic Chemistry Data - Slag Area Monitoring Wells
USX Corporation, Fairless Works
First Quarter 1987

Parameter	Units	Well Number							
		38	39	39 Replicate	42	43.	44	53	79
Acrolein	µg/l	< 250	< 250	< 250	< 250	< 250	< 250	< 250	< 250
Acrylonitrile	µg/l	< 250	< 250	< 250	< 250	< 250	< 250	< 250	< 250
Benzene	µg/l	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Carbon Tetrachloride	µg/l	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Chlorobenzene	µg/l	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
1,2-Dichloroethane	µg/l	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
1,1,1-Trichloroethane	µg/l	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
1,1-Dichloroethane	µg/l	7	< 5	9	< 5	< 5	< 5	< 5	14
1,1,2-Trichloroethane	µg/l	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
1,1,2,2-Tetrachloroethane	µg/l	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Chloroethane	µg/l	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
2-Chloroethylvinyl Ether	µg/l	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Chloroform	µg/l	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
1,1-Dichloroethylene	µg/l	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Trans-1,2-Dichloroethylene	µg/l	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
1,2-Dichloropropane	µg/l	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
1,3-Dichloropropylene	µg/l	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Ethylbenzene	µg/l	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Methylene Chloride	µg/l	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Methyl Chloride	µg/l	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Methyl Bromide	µg/l	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Bromoform	µg/l	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Dichlorobromomethane	µg/l	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Chlorodibromomethane	µg/l	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Tetrachloroethylene	µg/l	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Toluene	µg/l	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Trichloroethylene	µg/l	8	28	28	< 5	< 5	< 5	< 5	< 5
Chloroethylene	µg/l	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5

COUNTY OF BUCKS

OFFICE OF THE COMMISSIONERS

Administration Building, Doylestown, Pa. 18901

215-348-6000

April 9, 1987

The Honorable Keith K. Gowton, Chairman
Falls Township Board of Supervisors
248 Collingswood Road
Fairless Hills, PA. 19030

Dear Mr. Gowton:

I am enclosing copies of correspondence with both USX and the PA. Department of Environmental Resources regarding an existing Consent Decree. This legal document clearly identifies various sources of toxic and hazardous waste located at the Fairless Works. Additionally, this document spells out a prescribed plan of action to be undertaken by USX to correct these violations.

While I too share your concern that we must address the critical question of solid waste disposal, I would urge you to consider the legal, financial and environmental ramifications of this document before you proceed with the proposed landfill and cogeneration facility at this site. I would like to make available to you any resources that this office may have to help you evaluate this situation.

I will share with you the results of my correspondence with USX and the Department of Environmental Resources as soon as I receive them.

Sincerely,

Andrew L. Warren
County Commissioner

encl/
1. USX Letter
2. Consent Decree
3. PA DER Letter

know if any of the principals of the above mentioned proposal have been in contact with your Department to seek your advice and direction in developing their plans.

I appreciate your attention and concern to this critical situation.

Sincerely,

ANDREW L. WARREN

ALW:pm

Encls. (3) USX letter
Consent Decree
Falls Township Board of Supervisor's letter

COUNTY OF BUCKS

OFFICE OF THE COMMISSIONERS

Administration Building, Doylestown, Pa. 18901

215-348-6000

April 9, 1987

The Honorable Arthur A. Davis, Ph. D.
Secretary of Environmental Resources
Commonwealth of Pennsylvania
Harrisburg, Pa. 17120

Dear Dr. Davis:

It has recently come to my attention that a Consent Decree between United States Steel Corporation (defendant) and the Commonwealth of Pennsylvania Department of Environmental Resources (plaintiff) was filed with the Commonwealth Court on or about August 21, 1985. This Consent Decree specifically enumerates many serious environmental violations and orders clean up actions that must be undertaken by USX to abate the various environmental hazards which have been identified at the USX Fairless Works.

While the violations are many and varied, I am most concerned with those regarding the presence of toxic and hazardous waste which may have contaminated the groundwater and may be flowing directly into the Delaware River. As you know, the Fairless Works is located above the main water intake for the Philadelphia water supply. Many Bucks County citizens are supplied water from this source.

Currently, the Falls Township Board of Supervisors is considering a proposal by a business enterprise to locate a municipal solid waste landfill and cogeneration facility on the Fairless Works property. This proposal is in response to a critical solid waste disposal problem that is now facing Bucks County. Given the serious nature of the current environmental problems at Fairless Works, I am concerned that the proposed landfill and cogeneration facility will only serve to make a bad situation worse. Additionally, I am concerned that Falls Township or other Bucks County governments may be held liable for the monumental clean up costs of the proposed site.

I am requesting that you provide to me by April 20, 1987 a complete and detailed report which outlines the specific action(s) which have been taken by USX and the Department of Environmental Resources to meet the terms of the Consent Order. I would also like to

Bucks County

ER-SWM-87:2/83

Commonwealth of Pennsylvania
Department of Environmental Resources
Bureau of Solid Waste Management

Date Prepared _____ I.D. Number _____

Hazardous Waste Management

Facility Inspection Checklist for Compliance with Interim Status Standards Covering Ground-Water Monitoring
(Form 4)

Facility Name	U.S. Steel Corporation	Facility Permit Number	PAD 002375376
County	Bucks	Municipality	Falls Township
Company Address	Fairless Works Fairless Hills, PA 19030	Inspector's Name	Susan Marcucci
Company Contact/Official	Jim O'Brien	Branch/Organization	Waste Management
Title	Environmental Engineer	Date of Inspection	March 26, 1987

Type of facility: (check appropriately)

		Yes	No	Unknown
a)	surface impoundment (Borrow Pit 20)	✓		
b)	landfill		✓	
c)	land treatment facility		✓	
d)	disposal waste pile*		✓	

Ground-Water Monitoring Program

1.	Was the ground-water monitoring program reviewed prior to site visit? If "No",	✓		
	a) Was the ground-water program reviewed at the facility prior to site inspection?			
2.	Has a ground-water monitoring program (capable of determining the facility's impact on the quality of any ground-water system which the facility has the potential to affect, or as otherwise deemed necessary by the Department) been implemented? 75.265(n)(1)		✓*	
3.	Has at least one monitoring well been installed hydraulically upgradient from the limit of the waste management area? 75.265(n)(3)(i)	✓		
	a) Are ground-water samples from the upgradient well representative of background ground-water quality and not affected by the facility (as ensured by proper well number, locations, and depths)?		✓	

* - Listed separate from landfill for convenience of identification.

		Yes	No	Unknown
4.	Have at least three monitoring wells been installed hydraulically downgradient at the perimeter of the waste management area? 75.265(n)(3)(ii)	✓		
	a) Do well number, locations, and depths ensure prompt detection of any statistically significant amounts of hazardous waste or hazardous waste constituents that migrate from the waste management area to the groundwater?		✓	
	b) Have the locations of the monitoring wells been approved by the Department? 75.265(n)(3)(iii)	✓		
5.	Have the locations of the waste management areas been verified to conform with information in the ground-water program?	✓		
	a) If the facility contains multiple waste management components, is each component adequately monitored?			NA
6.	Do the numbers, locations, and depths of the ground-water monitoring wells agree with the data in the ground-water monitoring system program? (If "No", explain discrepancies on an attachment.)	✓		
7.	Well completion details: 75.265(n)(5) and 75.265(n)(6)			
	a) Are wells properly cased?	✓		
	b) Are wells screened (perforated) and packed where necessary to enable sampling at appropriate depths?			✓
	c) Are annular spaces properly sealed to prevent contamination of samples and the ground water?			✓
8.	Has a ground-water sampling and analysis plan been developed? 75.265(n)(7)	✓		
	a) Has it been followed?	✓		
	b) Is the plan kept at the facility?	✓		
	c) Does the plan include procedures and techniques for:			
	1) Sample collection?	✓		
	2) Sample preservation?	✓		
	3) Sample shipment?	✓		
	4) Analytical procedures?	✓		
	5) Chain of custody control?	✓		

	Yes	No	Unknown
9. Are the required parameters in ground-water samples being tested quarterly for the first year? 75.265(n)(8) and 75.265(n)(9)	✓*		
a) Are the ground-water samples analyzed for the following:			
1) Parameters characterizing the suitability of the ground-water as a drinking water supply? 75.265(n)(8)(i)	✓		
2) Parameters establishing ground-water quality? 75.265(n)(8)(ii)	✓		
3) Parameters used as indicators of ground-water contamination? 75.265(n)(8)(iii)	✓		
(i) Has provision been made for the establishment of initial background concentrations of all parameters in all monitoring wells quarterly during the first year? 75.265(n)(9)	✓		
(ii) For each indicator parameter, are at least four replicate measurements obtained at each upgradient well for each sample obtained during the first year of monitoring? 75.265(n)(10)	✓		
(iii) Are provisions made to calculate the initial background arithmetic mean and variance of the respective parameter concentrations or values obtained from the upgradient well(s) during the first year? 75.265(n)(10)	✓		
b) For facilities which have completed first year ground-water sampling and analysis requirements:			
1) Have samples been obtained and analyzed for the ground-water quality parameters at least semi-annually? 75.265(n)(11)(i)	✓		
2) Have samples been obtained and analyzed for the indicators of ground-water contamination at least quarterly? 75.265(n)(11)(ii)	✓		
c) Were ground-water surface elevations determined at each monitoring well each time a sample was taken? 75.265(n)(12)			✓
d) Were the ground-water surface elevations evaluated at least annually (by January 31) to determine whether the monitoring wells are properly constructed? 75.265(n)(17)			✓

	Yes	No	Unknown
e) If it was determined that modification of the number, location, or depth of monitoring wells was necessary, was the system brought into compliance with 75.265(n)(3)? 75.265(n)(17)		✓*	
f) Prior to any construction modification, were any proposed changes approved in writing by the Department? 75.265(n)(17)			NA*
10. Has an outline of a ground-water quality assessment and abatement program been prepared? 75.265(n)(13)	✓		
a) Does it describe a program capable of the following:			
1) Determining which hazardous waste or hazardous waste constituents have entered the ground water? 75.265(n)(13)(i)	✓		
2) Determining the rate and extent of migration of hazardous waste or hazardous waste constituents in ground water? 75.265(n)(13)(ii)	✓		
3) Determining concentrations of hazardous waste or hazardous waste constituents in ground water? 75.265(n)(13)(iii)	✓		
4) Abating any ground-water contamination attributable to the hazardous waste management facility? 75.265(n)(13)(iv)	✓		
b) After the first year of monitoring, have at least four replicate measurements of each indicator parameter been obtained for samples taken from each well monitored? 75.265(n)(14)	✓		
1) Were the results compared with the initial background means from the upgradient well(s) determined during the first year?	✓		
(i) Was each well considered individually?	✓		
(ii) Was the Student's t-test used (at the 0.01 level of significance)?	✓		
2) Was a significant increase (or pH decrease as well) found in the:			
(i) Upgradient wells	✓		
(ii) Downgradient wells			

If "Yes", Hazardous Waste Management Form 5 must also be completed.

		Yes	No	Unknown
11.	Have records been kept of the analyses required in paragraphs 75.265(n)(9) through 75.265(n)(11)? 75.265(n)(18)(i)		✓	
12.	Have records been kept of ground-water surface elevations taken at the time of sampling for each well (75.265(n)(12))? 75.265(n)(18)(i)		✓	
13.	Have records been kept of required elevations in indicator parameters (75.265(n)(14))? 75.265(n)(18)(i)		✓	
14.	Has the following ground-water information been reported to the Department: 75.265(n)(18)(ii)			
(a)(i)	During the first year, initial background concentrations of parameters listed in 75.265(n)(8)(i) within 15 days after completing each quarterly analysis required during the first year?	✓		
(ii)	For each well, have any parameters whose concentrations or values have exceeded the maximum contaminant levels allowed in drinking water supplies been separately identified?	✓		
(b)(i)	Semi-annual measurements of the parameters establishing ground-water quality (75.265(n)(8)(ii)) for each ground-water monitoring well taken at the end of the first (April 1) and third (October 1) quarters?	✓		
(ii)	Have any significant differences from the initial background found in the wells been separately identified?	✓		
(iii)	Has this information been submitted as part of the quarterly report (75.265(m)) for those facilities receiving hazardous waste from off-site sources?			N/A
(c)(i)	Quarterly measurement of the parameters used as indicators of ground-water contamination (75.265(n)(8)(iii)) and the required evaluations of these parameters under 75.265(n)(14)?		✓	
(ii)	Have any significant differences from initial background found in the upgradient wells been separately identified and included in the quarterly submission?		✓	
(d)(i)	Quarterly results of the evaluation of ground-water surface elevations under 75.265(n)(17)?		✓	
(ii)	If applicable, has a description of the response to that evaluation been included?		✓	

ER-SWM-88:2/83

Commonwealth of Pennsylvania
Department of Environmental Resources
Bureau of Solid Waste Management

Date Prepared _____ I.D. Number _____

Hazardous Waste Management

Inspection Compliance Checklist for a Facility Which May Be Affecting Ground-Water Quality
(Form 5)

Facility Name	United States Steel Corp.	Facility Permit Number	PAD 002375376
County	Bucks	Municipality	Falls Township
Company Address	Fairless Works Fairless Hills, PA 19030	Inspector's Name	Susan Marcuss
Company Contact/Official	Jim O'Brien	Branch/Organization	Waste Management
Title	Environmental Engineer	Date of Inspection	March 24, 1987

Type of facility: (check appropriately)	Yes	No	Unknown
a) surface impoundment (Borrow Pit 20)	✓		
b) landfill		✓	
c) land treatment facility		✓	
d) disposal waste pile		✓	

1. Have comparisons of ground-water contamination indicator perameters (75.265(n)(8)(iii)) for the upgradient well(s) shown a significant increase (or pH decrease as well) over initial background? 75.265(n)(14)(i)	✓		
a) If "Yes", has this information been submitted to the Department according to 75.265(n)(18)(ii)(B)?	✓		
2. Have comparisons of indicator parameters for the downgradient wells (75.265(n)(8)(iii)) shown a significant increase (or pH decrease as well) over initial background? 75.265(n)(14)(ii)	✓		
a) If "Yes", were additional ground-water samples taken for those downgradient wells where the significant difference was determined? 75.265(n)(14)(ii)		✓	
1) Were samples split in two?		✓	
2) Was the significant difference due to human (e.g., laboratory) error? If "Yes", do not continue.		✓	

	Yes	No	Unknown
3. If significant differences were not due to error, was a written notice sent to the Department within 7 days of confirmation? 75.265(n)(15)			✓
4. Within 30 days of notification of the Department, was a certified ground-water quality assessment plan, based on the outline required by 75.265(n)(13), developed and submitted for approval? 75.265(n)(15)(i)		✓★	
a) Does the plan specify 75.265(n)(15)(ii):			
1) well information (specifics)	✓		
(a) number?	✓	✓	
(b) locations?	✓	✓	
(c) size?	✓		
(d) depths?	✓		
2) sampling methods?	✓	✓	
3) analytical methods?	✓		
4) evaluation procedures?	✓		
5) abatement procedures?	✓	✓	
6) schedule of implementation?	✓	✓	
b) Does the plan allow for determination of 75.265(n)(15)(iii):			
1) Rate and extent of migration of hazardous waste or hazardous waste constituents in the ground water?	✓		
2) Concentrations of the hazardous waste or hazardous waste constituents in the ground water?	✓		
c) Is it indicated that the first determination was made as soon as technically feasible? 75.265(n)(15)(iv)			✓
1) Within 15 days after the first determination, was a written report containing the assessment of ground-water quality submitted to the Department?			✓

	Yes	No	Unknown
d) Was it determined that hazardous waste or hazardous waste constituents from the facility have entered the ground water?	____	____	✓
1) If "No", was the original indicator evaluation program, required by 75.265(n)(7) - 75.265(n)(12) and 75.265(n)(14), reinstated?	____	____	✓
a) Was the Department notified of the reinstatement of program within 15 days of the determination? 75.265(n)(15)(v)	____	____	✓
e) If it was determined that hazardous waste or hazardous waste constituents have entered the ground water (75.265(n)(15)(vi)):			
1) For facilities where the program was implemented prior to final closure, are determinations of hazardous waste or hazardous waste constituents continued on a quarterly basis? (If the program was implemented during the post-closure care period, determinations made in accordance with the ground-water quality assessment plan may cease after the first determination.)	____	____	NA
(a) Were subsequent ground-water quality reports submitted to the Department within 15 days of determination?	____	____	NA
(b) Has an approvable abatement plan, to be used to abate the ground-water contamination, been developed and submitted to the Department?	____	____	NA
2) Were records kept of the analyses and evaluations, specified in the ground-water quality assessment (throughout the active life of the facility)? 75.265(n)(19)(i)	____	____	NA
(a) If a disposal facility, were(are) records kept throughout the post-closure period as well?	____	____	NA
f) Are annual reports being submitted to the Department by January 31, which contain the results of the ground-water quality assessment program? 75.265(n)(19)(ii)	____	✓	____
1) Do the reports include the calculated or measured rate of migration of hazardous waste or hazardous waste constituents in the ground water during the reporting period?	____	✓	____
2) Do the reports include the measured volumes of hazardous waste or hazardous waste constituents removed from ground water using the abatement procedures specified in 75.265(n)(15)(vi)(C)?	____	✓	____

United States Steel Corporation
PAD002375376

The completion of this Form 4 and Form 5 was based on a site inspection and file review.

While on-site the location and construction of the wells were checked relative to RCRA requirements where possible. At least one monitoring well could not be located in the field.

Historically the groundwater monitoring USX Borrow Pit 20 unit has not adequately satisfied RCRA requirements. This is not entirely the fault of USX as they had installed a DER approved monitoring program which was grossly inadequate. The upgradient well is not representative of background quality. The contamination probably results from the upgradient area known as the "Coke Plant". Two of the downgradient wells, Nos. 8 and 9, are at such a distant from Borrow Pit 20 it is unlikely that these wells are specifically monitoring BP20.

In March of 1987 US EPA and the Department entered into a Consent Order and Agreement with USX. The CO&A required USX to submit a hydrogeological study to be reviewed by EPA and the Department. Additionally and separately the Department required USX to submit a closure plan for BP20 which would include a comprehensive groundwater monitoring system.

USX incorporated the required hydrogeologic study to satisfy both the CO&A and the closure plan. The study was reviewed by EPA and the Department. Revisions were recommended which USX agreed to make. A secondary review was recently completed by EPA and the Department. This most recent review has not yet been sent to USX. Within 14 days of notification of approval by the Department USX will submit the items specified in paragraph 3 of the compliance task and penalty section of the CO&A. According to the CO&A "This includes a proposal for the location, construction, design and depth of at least three downgradient groundwater monitoring wells at the perimeter of the waste management area of BP20 and at least one upgradient well located hydraulically upgradient from the limit of the waste management area of BP20".

Immediately upon approval by EPA and DER the revised monitoring plan must be implemented. At that point USX will begin the initial background year sampling with the new monitoring system. In essence they will be starting over.

Re 30 (BJO)266